

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

Paper No. 25

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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Ex parte KOUTAROU HIRAI  
and MASAKI HOSHINO

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Appeal No. 1999-0395  
Application No. 08/515,900

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HEARD: April 12, 2001

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Before HAIRSTON, GROSS, and LEVY, Administrative Patent Judges.

HAIRSTON, Administrative Patent Judge.

DECISION ON APPEAL

This is an appeal from the final rejection of claims 1 through 7. After submission of the brief, the examiner allowed claims 2 through 7 (answer, pages 2 and 5).

Accordingly, claim 1 is the only claim before us on appeal.

The disclosed invention relates to a radio system.

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Claim 1 reads as follows:

1. A radio system comprising:

clock oscillation means, comprising a variable capacitance diode, for generating a reference clock;

memory means;

frequency switching means; and

means for controlling said frequency switching means on the basis of the contents stored in said memory means,

wherein the oscillation frequency of said reference clock generated by said clock oscillation means is switched in accordance with a state of an output of said frequency switching means.

The references relied on by the examiner are:

Smith	4,550,292	Oct. 29, 1985
Garner et al. (Garner)	4,870,699	Sept. 26, 1989

Claim 1 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over acknowledged prior art Figure 8 of the drawing in view of Garner and Smith.

Reference is made to the briefs and the answer for the respective positions of the appellants and the examiner.

#### OPINION

The obviousness rejection of claim 1 is sustained.

Appellants and the examiner both agree that acknowledged prior art Figure 8 does not disclose frequency switching means

4000 being controlled in response to contents stored in a memory (brief, page 8; answer, page 5). According to the examiner (answer, page 5), Garner discloses a radio system (Figure 2) in which microprocessor 28 controls frequency switching of oscillator 30 in response to contents stored in memory 32. The control output from microprocessor 28 to oscillator 30 is labeled SEL. The examiner contends (answer, page 5) that it would have been obvious to one of ordinary skill in the art to apply the memory technique of Garner to the system of prior art Figure 8 "for the simple purpose of obtaining a more accurate technique through the use of previously stored information," and that the modified teachings of prior art Figure 8 would lack a variable capacitance diode in the clock oscillation means.

Based upon the examiner's description of the teachings of Garner, we find that claim 1 reads on Figure 2 of Garner. For example: the radio system is described in Garner at column 1, lines 9 through 13; the memory means is described in Garner at column 10, lines 50 through 65, column 14, lines 11 through 19, column 15, lines 37 through 42, and column 16, lines 62 through 66; the frequency switching means is the

microprocessor 28, and it is described in Garner at column 7, lines 40 through 45, column 8, lines 47 through 55, column 13, lines 14 through 25, column 14, lines 11 through 14, and column 15, lines 37 through 44. The oscillation frequency of the reference clock generated by oscillator 30 in Garner is switched in accordance with a state of output SEL from microprocessor 28. The only difference between Figure 2 of Garner and claim 1 is that Garner does not use a variable capacitance diode in the oscillator 30. Thus, it appears that the clock oscillator circuit, frequency switching circuit, and control circuit teachings of admitted prior art Figure 8 are merely cumulative to the teachings found in Garner.

For a teaching of the use of a variable capacitance diode 66 in a clock oscillator circuit, the examiner turns to the teachings of Smith (Figure 1; column 5, line 60 through column 6, line 33). In view of Smith's teaching that it is well known in the art to use a variable capacitance diode in a clock oscillation circuit, we agree with the examiner that it would have been obvious to one of ordinary skill in the art to use such a circuit component in the oscillator disclosed by Garner.

Appellants' argument (brief, page 10) that "if RAM circuit 32 of Garner . . . were combined with the teachings of the other references, it would have been necessary to provide a digital-to-analog converter as a frequency synthesizer, as opposed to a clock oscillation means including a variable capacitance diode" is without merit since the examiner is not relying on the frequency synthesizer 16 in Garner (Figure 2) to demonstrate the obviousness of the claim 1 subject matter. As indicated supra, the examiner's proposed modification is to the oscillator, and not to the frequency synthesizer. In the absence of evidence, appellants' argument (brief, page 11) that the proposed modification would not work is likewise without merit. Appellants' argument (brief, page 11) that "the frequency of the oscillator circuit is changed in a digital manner" in Smith is not understood in light of the use of digital-to-analog converters 62 in Smith (Figure 1).

Based upon the foregoing, the obviousness rejection of claim 1 is sustained in view of the teachings of Garner and Smith. In affirming a multiple reference rejection under 35 U.S.C. § 103, the Board may rely on less than the total number of references relied on by the examiner. In re Bush, 296 F.2d

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491, 496, 131 USPQ 263, 266-67 (CCPA 1961); In re Boyer, 363  
F.2d 455, 458, n.2, 150 USPQ 441, 444, n.2 (CCPA 1966).

DECISION

The decision of the examiner rejecting claim 1 under 35  
U.S.C. § 103(a) is affirmed.

No period for taking any subsequent action in connection  
with this appeal may be extended under 37 CFR § 1.136(a).

AFFIRMED

KENNETH W. HAIRSTON	)	
Administrative Patent Judge	)	
	)	
	)	
	)	
	)	BOARD OF PATENT
ANITA PELLMAN GROSS	)	APPEALS
Administrative Patent Judge	)	AND
	)	INTERFERENCES
	)	
	)	
	)	
STUART S. LEVY	)	
Administrative Patent Judge	)	

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***Leticia***

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APJ HAIRSTON

APJ LEVY

APJ GROSS

DECISION: AFFIRMED

Send Reference(s): Yes No  
or Translation (s)

Panel Change: Yes No

Index Sheet-2901 Rejection(s):

Prepared: March 25, 2002

Draft                  Final

3 MEM. CONF.    Y                  N

OB/HD                  GAU

PALM / ACTS 2 / BOOK  
DISK (FOIA) / REPORT